



State Watershed Restoration Projects

April 26, 2012

Bayou Pierre Watershed
Enhancement Group



U.S. Department of the Interior
U.S. Geological Survey

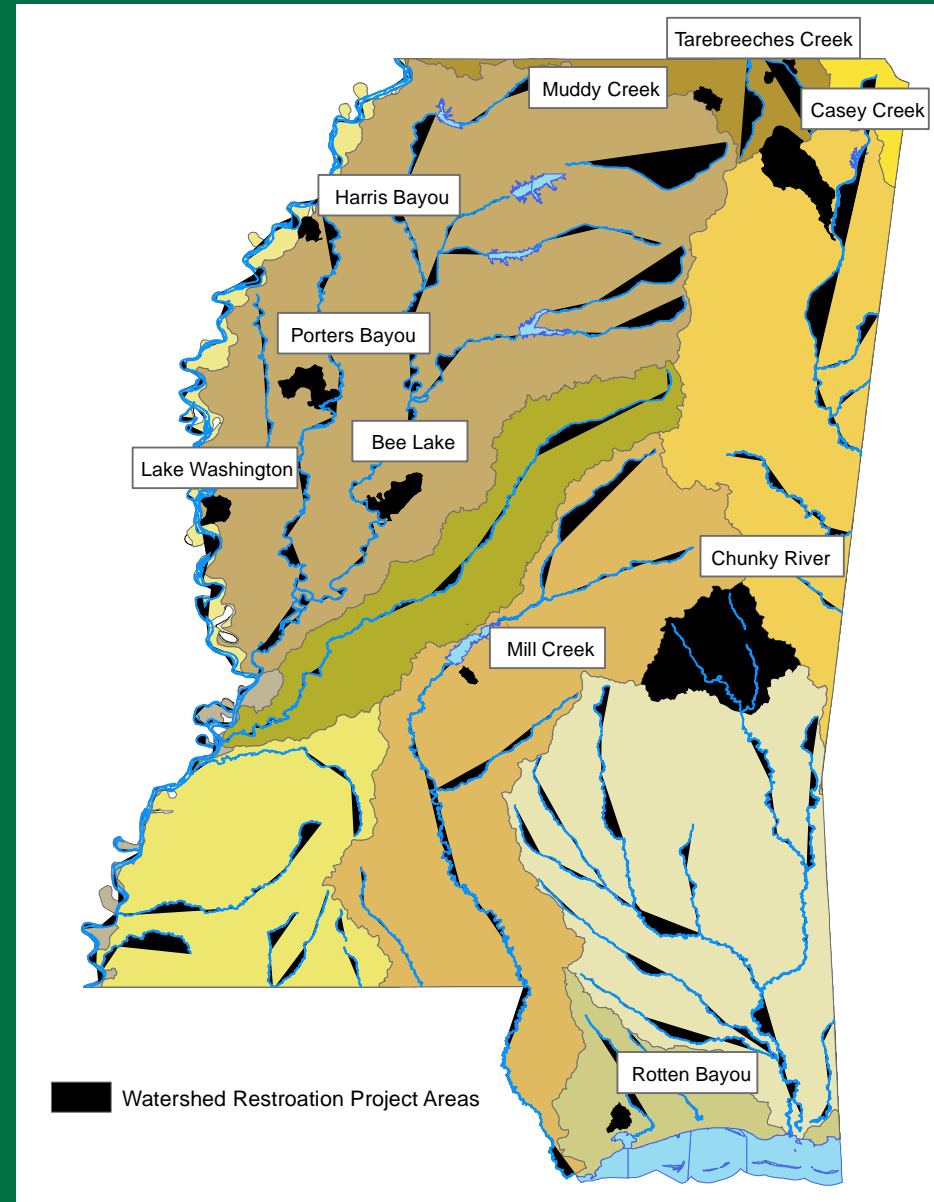
Background

- MDEQ Basin Management Program
- 319 Non-point source funding
- MDEQ/USGS Joint Agreement
- Other Partners (USACE)
- Restoration/BMPs performed
- USGS develops monitoring plan and performs monitoring to measure effectiveness and progress



Past and Current Projects

- Mill Creek
- Chunky River
- Casey Creek
- Harris Bayou
- Porter Bayou
- Bee Lake
- Tarebreeches Creek
- Muddy Creek
- Rotten Bayou
- Upper Ross Barnett (future)



Project Scopes

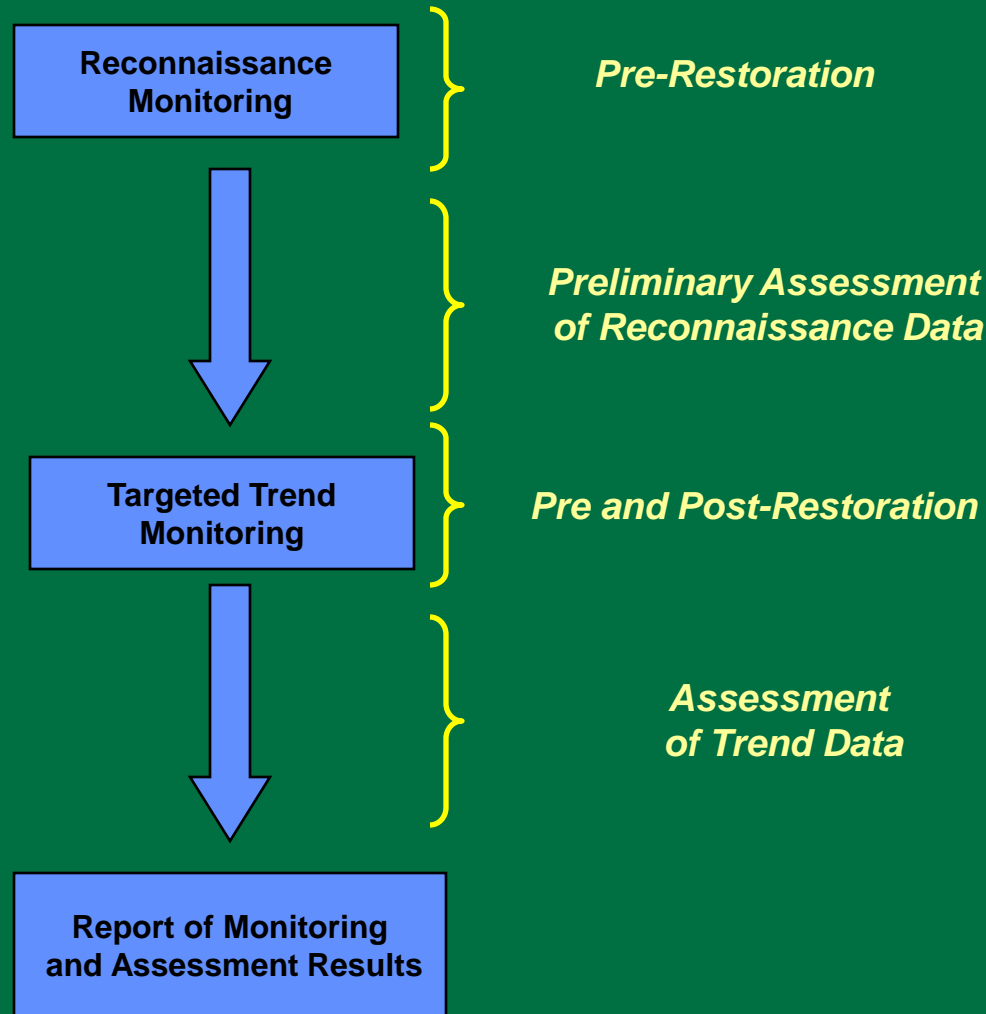
- Varies depending on the issues of concern
- Restoration, Protection, Education
 - Several types of restoration activities
- Many in the Delta
- Many are focused on Nutrient Reduction
- Involves several collaborating agencies
- Selection of watersheds is primarily according to MDEQ's concerns
 - TMDLs, 303(d), Nutrient Reduction

Chunky River Watershed

- **Chunky River Watershed Implementation Team**
 - Developed a Watershed Implementation Plan (WIP)
- **USGS Role**
 - Aid in identifying exact causes (pollutants) of impairment for 303(d) listed waters
 - Aid in identifying extent of impairment and sources
 - Aid in identifying locations of other waters that may need protection/restoration efforts
 - Guide the WIT in identifying areas for and types of restoration efforts
- **Cooperators – MDEQ, East MS Land Trust, City of Meridian, USGS**



Overall Monitoring Concept



Mill Creek Watershed

- Primary issue – sediment
- BMPs implemented in 3 locations
 - above Hwy 25 – bank stabilization
 - Hidden Hills subdivision
 - NWR School
- Enforcement carried out
 - Pinelands
- Cooperators – MDEQ, Rankin County, USDA/NRCS, USGS



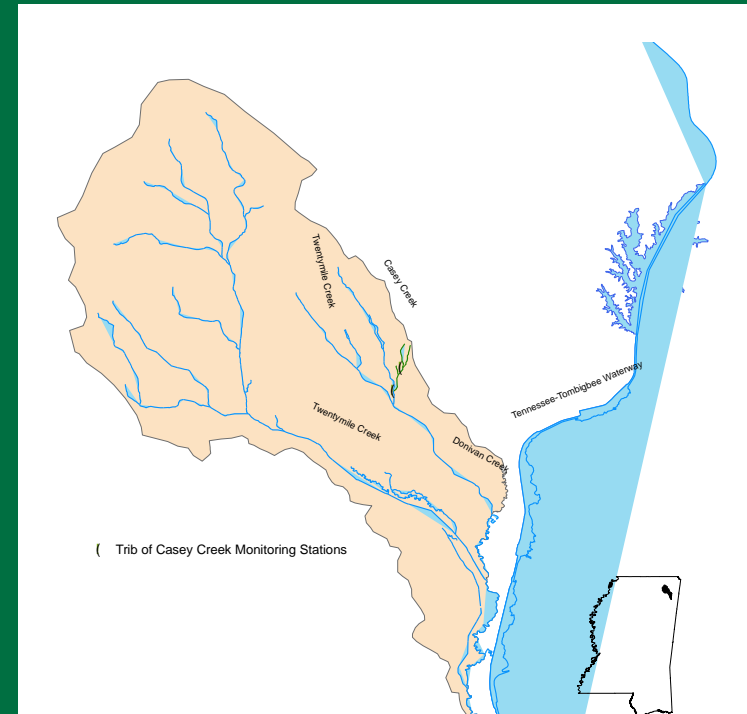
EXAMPLE: Erosion Control around NW Rankin High School

- Slope drains, ditch stabilizations, check dams
- Pre/post BMP comparison



Casey Creek Watershed

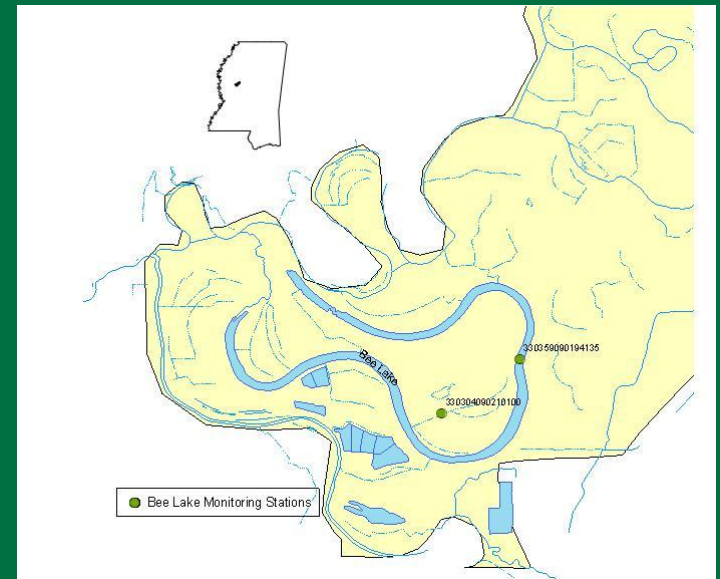
- Part of Twenty Mile/Donivan Creeks Watersheds (Prentiss Co.)
- Primary issue – sediment
- Pre/Post BMP monitoring
- Cooperators – MDEQ, Prentiss County, MS Soil and Water Conservation Commission, USDA/NRCS, USGS





Bee Lake Watershed

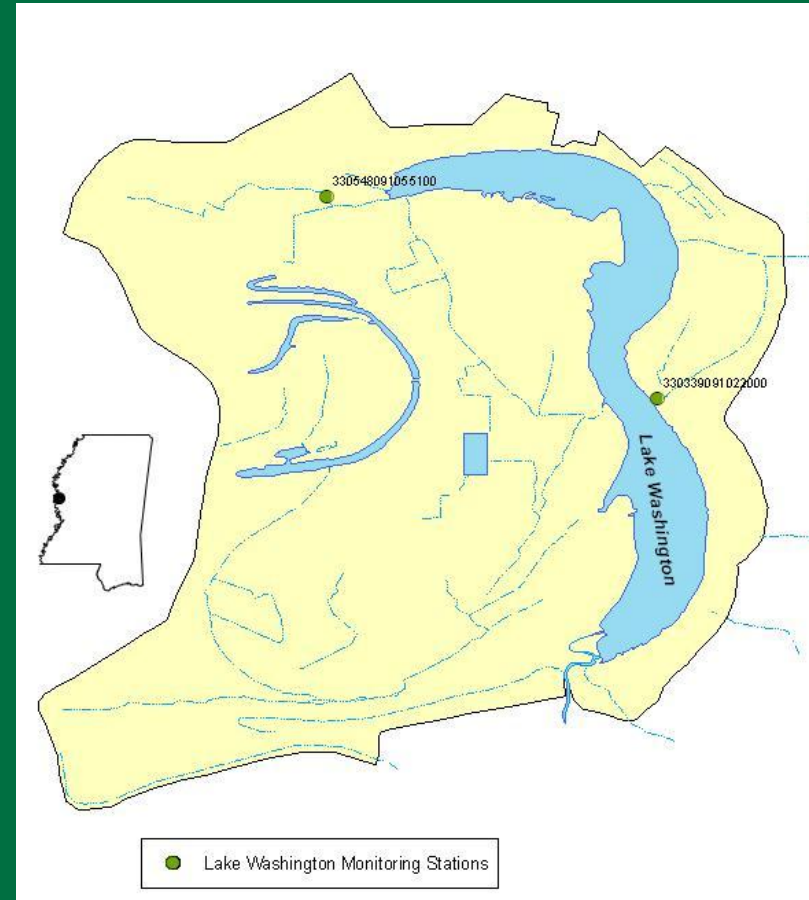
- Primary pollutant – sediment, nutrients
- Cooperators – MDEQ, DELTA F.A.R.M, USDA/NRCS, MSU, USGS





Lake Washington

- Primary pollutant – sediment, nutrients
- 2 tributary monitoring stations
- Cooperators – MDEQ, Washington County, USDA/NRCS, USGS

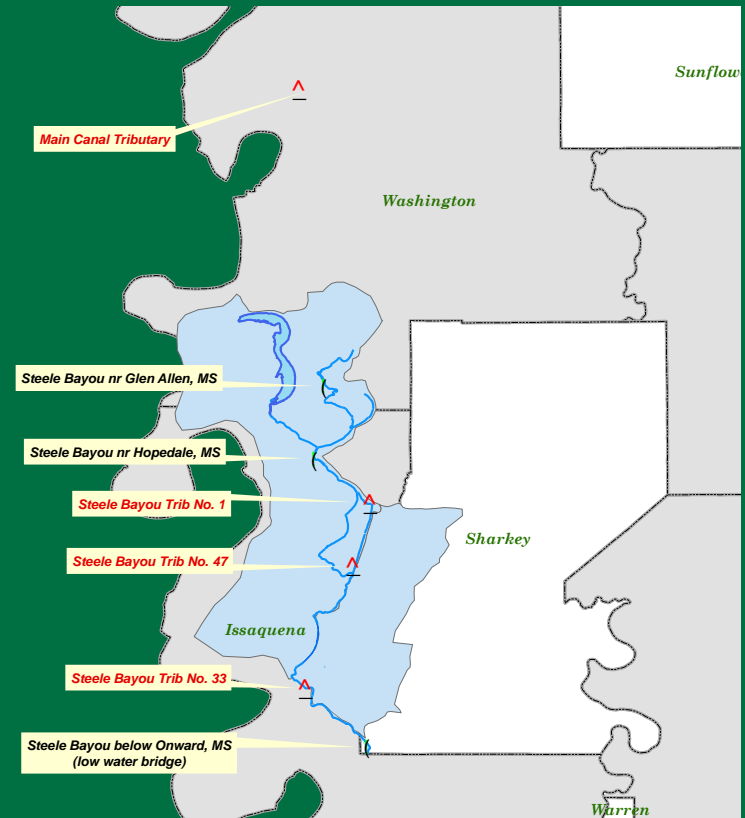


Trib at Stein



Steele Bayou

- Primary pollutant – sediment, nutrients
- Cooperators – US Army Corps of Engineers, MDEQ, DELTA F.A.R.M, USDA/NRCS, USGS



Steele Bayou Project

- US Army Corps of Engineers, Vicksburg District
 - Spent millions of dollars on restoration of Steele Bayou
 - Had little to no data to show results
- Routine Sampling
 - June 2010 - present
- Storm sampling
 - Started in Winter 2010
 - Several recent events (2011)
 - Data available 2 events Hopedale



Steele Bayou Trib No.1

Pre - BMP



Post - BMP



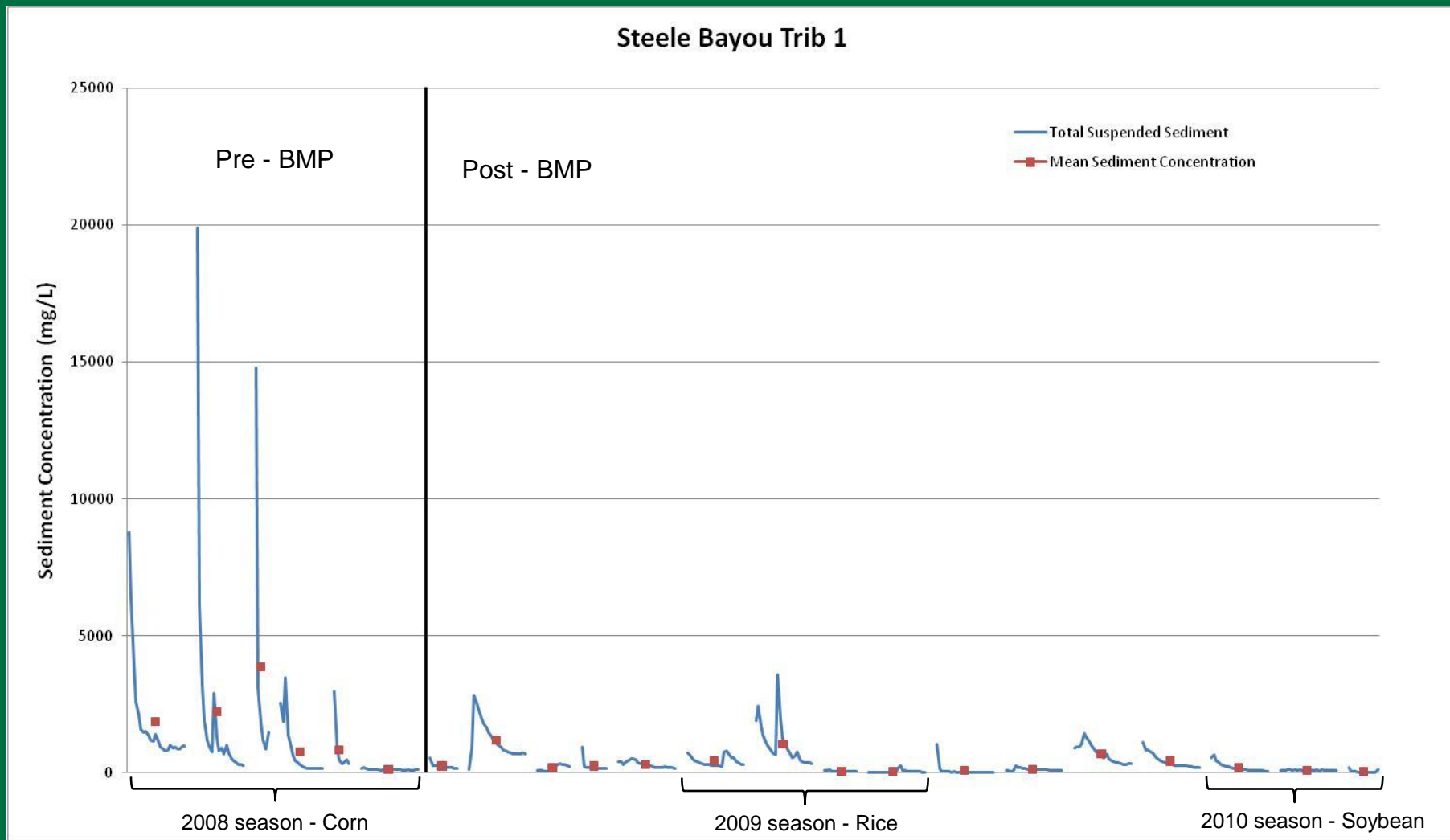
Pre - BMP



Post - BMP

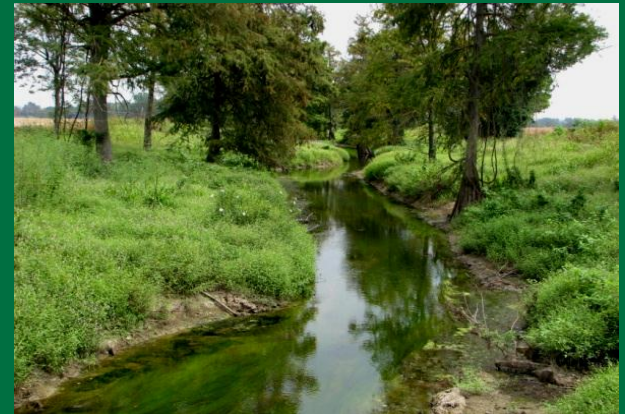


Steele Bayou Trib No.1 - Sediment



Harris and Porters Bayous

- Nutrient Reduction Projects
- Site Locations
 - Paired watershed approach
 - Before-after
- What is being monitored
 - Nutrients, sediment, flow, physicochemical, biological
- Cooperators – MDEQ, Delta F.A.R.M., MSU, USACE, USDA/NRCS, Private Land Owners



**Overcup Trib 2
(treatment site)**



Porters Tier 3



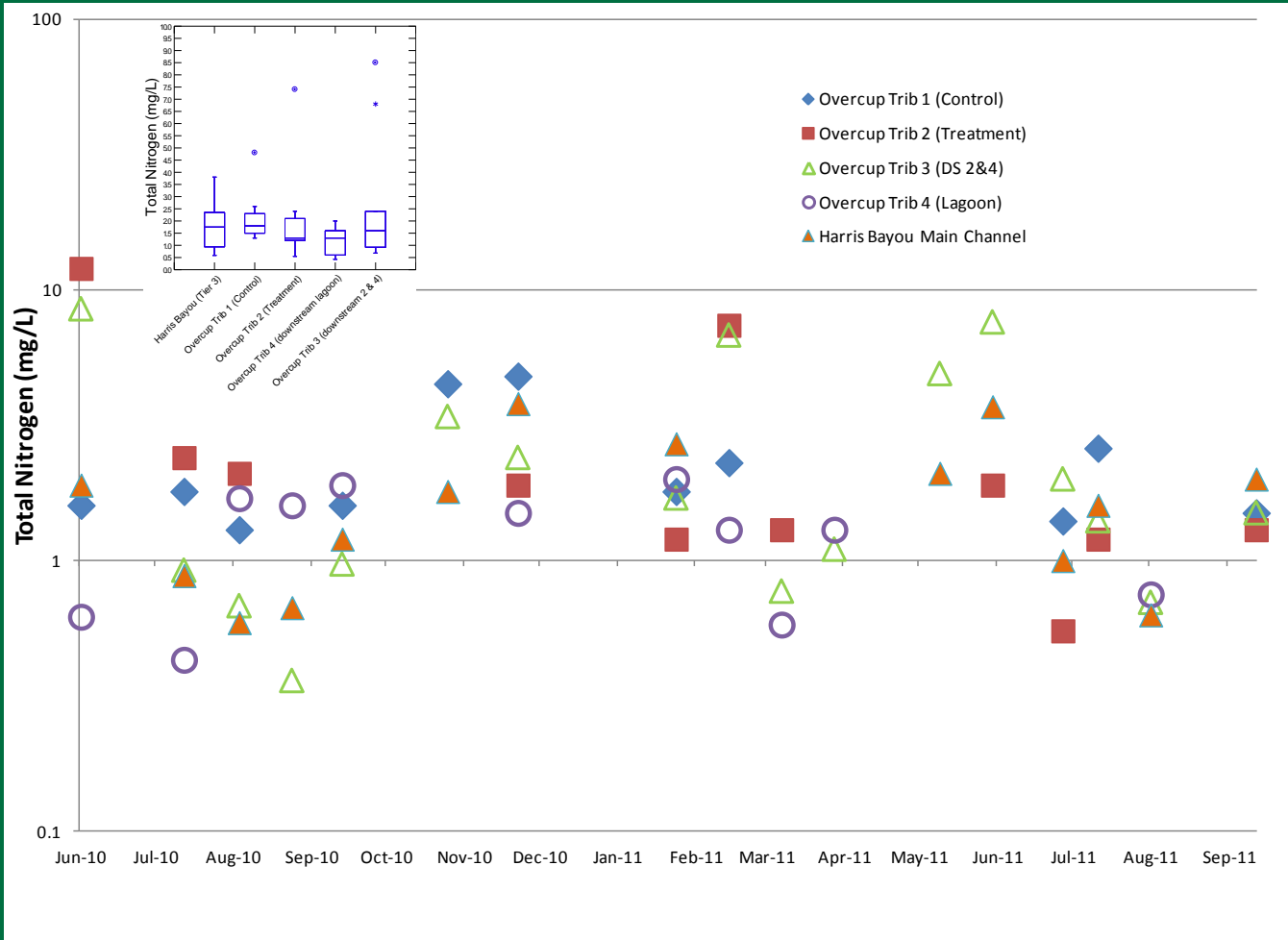
Porters Trib 1



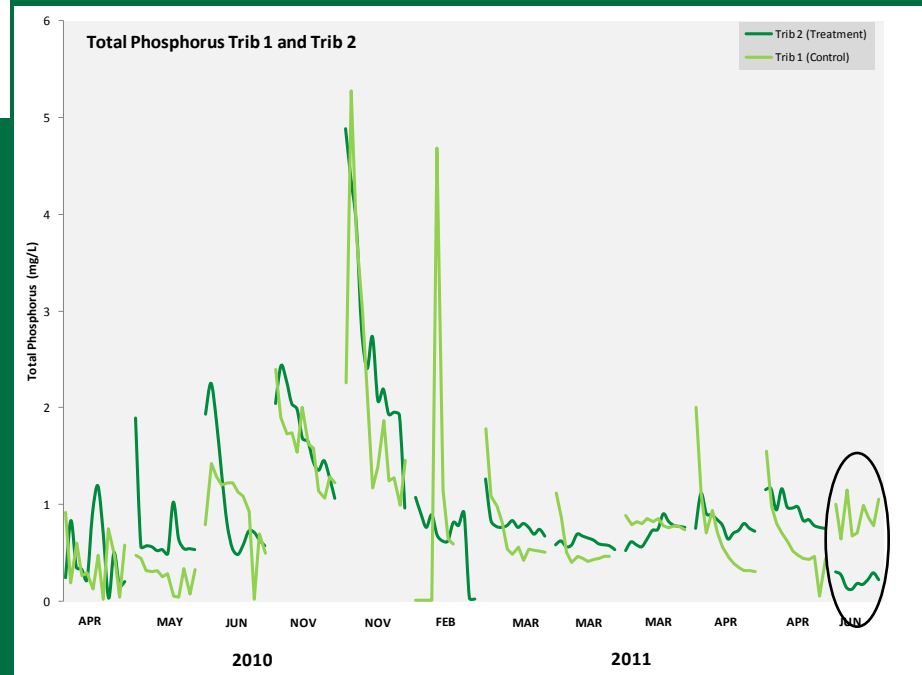
Harris Bayou (Tier 3)



Harris – Routine Monitoring

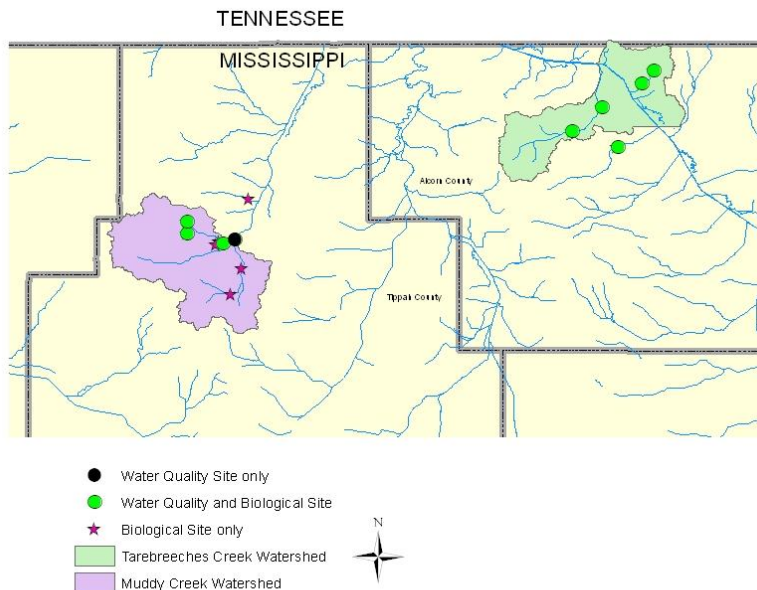


Harris – Storm Monitoring



Uplands Nutrient Reduction

- Muddy Creek watershed
- Tarebreeches Creek watershed
- Cooperators – MDEQ, Alcorn and Tippah County, USDA/NRCS, MSWCC, Private Land Owners



WATER QUALITY MONITORING PLAN FOR TAREBREECHES CREEK, MISSISSIPPI

JANUARY 2012 THROUGH DECEMBER 2014



NOVEMBER 22, 2011

WATER QUALITY MONITORING PLAN FOR BELL – WEST PRONG MUDDY CREEK, MISSISSIPPI

JANUARY 2012 THROUGH DECEMBER 2014



NOVEMBER 22, 2011

Tarebreeches Creek (2011)



Eastes Creek (control) (2011)



North Prong Muddy above Hwy 15 (2011)



Muddy Creek (2012)



Little Cane Creek (2012)



Coastal Nutrient Reduction

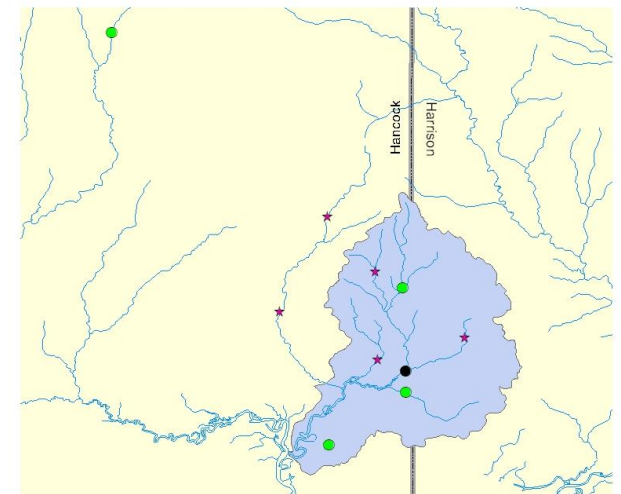
- Rotten Bayou
- Cooperators – MDEQ, Hancock and Harrison County, USDA/NRCS, MSWCC, Land Trust for the MS Coastal Plain, Diamondhead Community, Private Land Owners

**WATER QUALITY MONITORING PLAN
FOR ROTTEN BAYOU, MISSISSIPPI**

JANUARY 2012 THROUGH DECEMBER 2014



NOVEMBER 22, 2011



- Water Quality Site only (routine)
- Water Quality and Biological Site (real-time)
- ★ Biological Site only
- Rotten Bayou Watershed

UT Bayou LaSalle (2012)



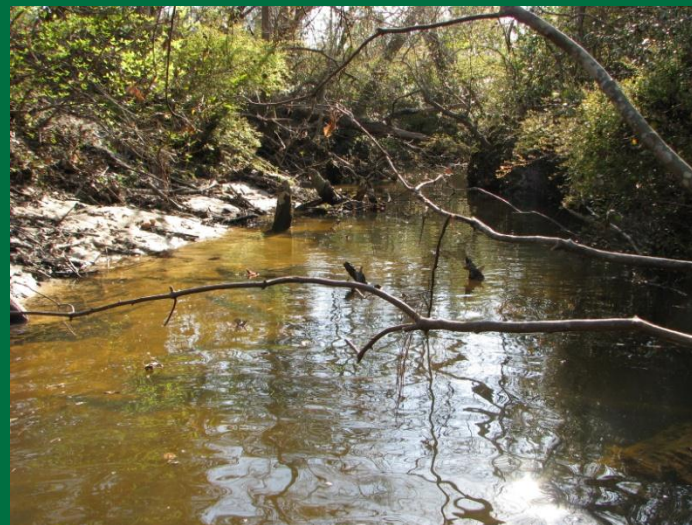
UT Rotten Bayou at Diamondhead (2012)



Rotten Bayou nr Kiln (2011)



Mill Creek (2011)



USGS capabilities

- Collection and interpretation of ecological and environmental data
- Scope of monitoring programs can be customized
 - Range of resources, data and intensity of monitoring program
- GIS, Hydrology, Physical Habitat, Water Quality, Water Quantity, Biological indicators, species surveys, Modeling
- Access to Coop Funds for cost share and DOI funding

Discussion

